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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,355	04/12/2004	Robert Martinson	NOVE100042000	4719

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EXAMINER	
BAND, MICHAEL A	

ART UNIT	PAPER NUMBER
1709	

MAIL DATE	DELIVERY MODE
05/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/823,355	MARTINSON ET AL.	
	Examiner	Art Unit	
	Michael Band	1709	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/15/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed July 15, 2004 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 11 recites the limitation "the platform shield" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-11 and 13-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Chung et al (US Patent No. 6,171,453).

With respect to claims 1 and 14, Chung '453 discloses "an alignment shielding ring for use in a vapor deposition chamber" (col. 6, lines 4-5) that can be "used in a sputter chamber to shield alignment marks or any other marks provided on the edge of a wafer from sputtered metal particles" (col. 6, lines 17-20), with the chamber (figures 6A and 6B, part 80) having a movable pedestal (figure 6A, part 76) surrounded by chamber interior lower, side and upper walls. The target is shown in the prior art (figure 1, part 20) as being above the substrate and therefore, would be above the wafer (figure 6A, part 26) and present in the upper portion of the deposition chamber (figures 6A and 6B, part 80). As depicted in figures 6A and 6B, the pedestal shielding ring (part 84) is attached to the pedestal (82), with a pedestal elevator (part 76) capable of raising and lowering the pedestal (col. 6, lines 45-49). The pedestal shield surrounds and extends outward from the pedestal (figure 7; figures 6A and 6B, part 84). The upper chamber shield (figures 6A and 6B, part 46) extends downward from an upper portion, with a lower end extending inward towards and adjacent to the pedestal shield (part 84) when the pedestal is raised. The lower chamber shield (figures 6A and 6B, part 48) also helps prevent sputtered material from reaching the bottom.

With respect to claims 2 and 3, Chung '453 further discloses that in figures 6A and 6B the upper clamp shield (part 46) and lower clamp shield (part 48) work cooperatively with the pedestal shielding ring (part 84) to prevent sputtered target

material from reaching the sidewalls and bottom when the pedestal is raised (figure 6B). The sidewall shield (part 48) is depicted in figure 6B as being below and outward of the pedestal upper surface.

With respect to claims 4 and 15, Chung '453 further discloses in figures 6A and 6B a shielding ring (part 84) which surrounds the upper portion of the pedestal (part 82; figure 7), and a lower portion on the outer portion of the pedestal that extends downward to the chamber lower wall.

With respect to claims 5 and 16, Chung '453 further discloses in Figure 6A a shielding ring (part 84) surrounding the pedestal and has a lower portion that extends downward to the chamber lower wall. Chung '453 also depicts that there is an outward portion extending away from this lower portion (part 48). Chung '453 further depicts a sidewall shield (part 48) that has a lower end disposed below and outward of the pedestal shield upper portion and inward of the pedestal shield outward portion when the pedestal is raised.

With respect to claims 6 and 17, Chung '453 further depicts figure 6A having a shielding ring (part 84) with an upper portion surrounding the pedestal and a lower portion pointing downward. The lower chamber shield (part 48) is adjacent to the shielding ring, having an upward portion that extends outward. Figure 6B shows a sidewall shield (i.e. part 46) that has a lower end disposed outward of the upper portion of the pedestal shield and inward of the pedestal shield outward portion (part 48). The sidewall shield (figure 6B, part 46) has an outward portion between the chamber

sidewall and the sidewall shield lower end disposed outward of the pedestal shield outward portion when the pedestal shield is raised.

With respect to claims 7 and 18, Chung '453 further depicts figure 6A having a shielding ring (part 84) with an upper portion surrounding the pedestal and a lower portion pointing downward. The lower chamber shield (part 48) is adjacent to the shielding ring, having an outward portion that extends upward. At a raised position, the lower chamber shield (part 48) becomes the sidewall shield, with a lower end disposed below the pedestal and outward of the pedestal, and an upward portion that is inward of the pedestal shield outward portion when the pedestal is raised (figure 6B).

With respect to claims 8 and 19, Chung '453 further depicts an outward portion of the sidewall shield (part 48) that is between the chamber wall and the lower end of the sidewall shield which is outward of the pedestal shield outward portion (part 84) when the pedestal is raised (figure 6B).

With respect to claim 9, Chung '453 further depicts a sidewall shield (part 46) with a lower end disposed above the pedestal shield (part 84) when the pedestal is raised (figure 6B) and the pedestal shield extends outward from the pedestal (part 82) toward the chamber sidewalls and below the sidewall shield lower end.

With respect to claim 10, Chung '453 further depicts a pedestal shield (part 84) with an upper portion surrounding the pedestal (figure 7) and a lower portion extending downward toward the chamber wall, and the sidewall shield (part 48) has an extension to the lower end extending downward below the pedestal shield lower portion, and an inward portion extending upward from the extension, and wherein the pedestal shield

lower portion is between the sidewall shield lower end extension and sidewall shield inward portion (figures 6A and 6B).

With respect to claim 11, Chung '453 further depicts a pedestal shield (figure 6A part 84) with an upper portion surrounding the pedestal and a lower portion extending downward toward the chamber wall and further including a bottom wall shield (figure 6A, part 48) having a lower portion extending along the chamber lower wall, and inward and outward portions extending upward from the bottom shield lower portion. The bottom wall shield inward portion extends inward of the platform (i.e. pedestal) shield lower portion and the bottom wall shield outward portion extending outward of the platform (i.e. pedestal) shield lower portion.

With respect to claim 13, Chung '453 further depicts in figures 6A and 6B that the sidewall shields (part 46 and 48) are adapted to avoid contact with the pedestal in both raised and lowered positions.

7. Claims 12 and 20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Chung et al (US Patent No. 6,171,453).

With respect to claim 12, Chung '453 further depicts figure 6A with the pedestal (part 82) lowered via pedestal elevator (part 76) and the sidewall shield (part 46) above the pedestal.

With regard to loading the wafer horizontally, the reference fails to explicitly state how the wafer is loaded. It is either inherent or obvious in the design to remove part 48 via the connector pin seen connecting part 48 and part 54 together. Removing part 48 in

figure 6A would leave sufficient distance to load the wafer horizontally (col. 6, lines 49-51).

With respect to claim 20, Chung '453 further discloses "an alignment shielding ring for use in a vapor deposition chamber" (col. 6, lines 4-5) that can be "used in a sputter chamber to shield alignment marks or any other marks provided on the edge of a wafer from sputtered metal particles" (col. 6, lines 17-20), with the chamber (figures 6A and 6B, part 80) having a movable pedestal (figure 6A, part 76) surrounded by chamber interior lower, side and upper walls. A target is shown in the prior art (figure 1, part 20) as being above a substrate and therefore, above the wafer (figure 6A, part 26) and present in the upper portion of the deposition chamber (figures 6A and 6B, part 80). As depicted in figures 6A and 6B, the pedestal shielding ring (part 84) is attached to the pedestal (82), with a pedestal elevator (part 76) capable of raising and lowering the pedestal (col. 6, lines 45-49). The pedestal shield surrounds and extends outward from the pedestal (figure 7; figures 6A and 6B, part 84). The upper chamber shield (figures 6A and 6B, part 46) extends downward from an upper portion, with a lower end extending inward towards and adjacent to the pedestal shield (part 84) when the pedestal is raised. The lower chamber shield (figures 6A and 6B, part 48) also helps prevent sputtered material from reaching the bottom. Chung '453 further depicts figure 6A with the pedestal (part 82) lowered via pedestal elevator (part 76) and the sidewall shield (part 46) above the pedestal.

With regard to loading the wafer horizontally, the reference fails to explicitly state how the wafer is loaded. It is either inherent or obvious in the design to remove part 48

via the connector pin seen connecting part 48 and part 54 together. Removing part 48 in figure 6A would leave sufficient distance to load the wafer horizontally (col. 6, lines 49-51).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent No. 5,632,873; US Patent No. 6,627,050; US Patent No. 6,231,725.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Band whose telephone number is (571) 272-9815. The examiner can normally be reached on Mon-Fri, 8am-4pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on (571) 272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MAB

ALEXA D. NECKEL
SUPERVISORY PATENT EXAMINER